# General

## Guideline Title

Definitive and adjuvant radiotherapy in locally advanced non-small cell lung cancer: an American Society for Radiation Oncology (ASTRO) evidence-based clinical practice guideline.

## Bibliographic Source(s)

Rodrigues G, Choy H, Bradley J, Rosenzweig KE, Bogart J, Curran WJ Jr, Gore E, Langer C, Louie A, Lutz S, Machtay M, Puri V, Werner-Wasik M, Videtic GMM. Definitive and adjuvant radiotherapy in locally advanced non-small cell lung cancer: an American Society for Radiation Oncology (ASTRO) evidence-based clinical practice guideline. Pract Radiat Oncol. 2015;(Suppl):1-48. [122 references]

## Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

# Recommendations

## Major Recommendations

The American College of Physicians (ACP) process for assigning strength of recommendation (Strong, Weak) and grading of quality of evidence (High-, Moderate-, and Low-Quality) is defined at the end of the "Major Recommendations" field.

Key Question (KQ) 1: What is the ideal external beam dose fractionation for the curative-intent treatment of locally advanced (LA) non-small cell lung cancer (NSCLC) with radiation therapy alone?

Guideline Statements

A. Radiotherapy alone has been shown to be superior to observation strategies or chemotherapy alone for LA NSCLC in terms of overall survival but at the cost of treatment-related side effects such as esophagitis and pneumonitis (Moderate-quality evidence, Strong recommendation).
B. Radiotherapy alone may be used as definitive radical treatment for patients with LA NSCLC who are ineligible for combined modality therapy (i.e., due to poor performance status, medical comorbidity, extensive weight loss, and/or patient preferences) but with a tradeoff of survival for improved treatment tolerability (High-quality evidence, Strong recommendation).
C. In the context of conventionally fractionated radiotherapy, a minimum dose of 60 Gy is recommended to optimize important clinical outcomes such as local control (High-quality evidence, Strong recommendation).
D. Altered fractionation schedules that have been explored in the medical literature include hyperfractionation (lower dose per fraction over the standard treatment duration), accelerated fractionation (conventional fraction size and same total dose, given in a shorter period of time),

accelerated hyperfractionation (combination of these two), and hypofractionation (higher dose per fraction and fewer fractions) (No evidence rating, Strong recommendation).

E. Specific altered fractionation schemes that have been investigated in various comparative effectiveness research investigations (including randomized controlled trials [RCTs]) include 45 Gy/15 fractions (hypofractionation), 69.6 Gy/58 fractions twice-daily (BID) (hyperfractionation), 54 Gy/36 fractions thrice-daily (TID) over 12 consecutive days (continuous hyperfractionated accelerated radiation therapy [CHART], accelerated hyperfractionation), and 60 Gy/40 fractions TID over 18 days (continuous hyperfractionated accelerated radiotherapy weekend less [CHARTWEL], accelerated hyperfractionation) (No evidence rating, Strong recommendation).

KQ 2: What is the ideal external beam dose fractionation for the curative-intent treatment of LA NSCLC with chemoradiotherapy?

Guideline Statements

A. The standard thoracic radiotherapy dose-fractionation for patients treated with concurrent chemotherapy is 60 Gy given in 2 Gy once daily fractions over 6 weeks (Moderate-quality evidence, Strong recommendation).
B. Dose escalation beyond 60 Gy with conventional fractionation has not been demonstrated to be associated with any clinical benefits including overall survival (Moderate-quality evidence, Strong recommendation).
C. Hyperfractionated radiotherapy regimens that do not result in acceleration of the treatment course, even though the total nominal radiotherapy dose may be modestly increased, do not appear to improve outcomes compared with conventionally fractionated therapy (Moderate-quality evidence, Strong recommendation).
D. The optimal thoracic radiotherapy regimen for patients receiving sequential chemotherapy and radiotherapy is not known; however results from the CHARTWEL and hyperfractionated, accelerated radiotherapy (HART) phase III studies suggest that increasing the biologic equivalent dose by using accelerated hyperfractionated radiotherapy may be of benefit following induction chemotherapy in LA NSCLC (Moderate-quality evidence, Strong recommendation).
E. Although the impact of increasing the predicted biologic equivalent dose via accelerated radiotherapy regimens is not clear, further study of accelerated hypofractionated regimens is of interest to optimize the therapeutic ratio of treatment, particularly in the context of advanced imaging, radiotherapy planning, and treatment delivery (No evidence rating, Strong recommendation).

KQ3: What is the ideal timing of external beam radiation therapy (EBRT) in relation to systemic chemotherapy for the curative-intent treatment of LA NSCLC?

Guideline Statements

A. There is phase III evidence demonstrating improved overall survival, local control, and response rate associated with concurrent chemoradiation when compared against sequential chemotherapy followed by radiation (High-quality evidence, Strong recommendation).
B. There is no proven role for the routine use of induction chemotherapy prior to chemoradiotherapy, although, this treatment paradigm can be considered for the management of bulky tumors to allow for radical planning after chemotherapy response (Moderate-quality evidence, Strong recommendation).
C. There are no phase III data specifically supporting the role for consolidation chemotherapy after chemoradiotherapy for the improvement of overall survival; however, this treatment is still routinely given to manage potential micrometastatic disease particularly if full systemic chemotherapy doses were not delivered during radiotherapy (Low-quality evidence, Strong recommendation).
D. For patients that cannot tolerate concurrent chemoradiotherapy, sequential chemotherapy followed by radical radiation has been shown to be associated with an overall survival benefit when compared to radiotherapy alone (High-quality evidence, Strong recommendation).
E. The ideal concurrent chemotherapy regimen has not been determined; however, the two most common regimens (cisplatin/etoposide and carboplatin/paclitaxel) are the subject of a completed phase III clinical trial (NCT01494558). (No evidence rating, Strong recommendation).

KQ4: What are the indications for adjuvant postoperative radiotherapy for the curative-intent treatment of LA NSCLC?

Guideline Statements

A. Phase III studies and meta-analyses of postoperative radiation therapy (PORT) in completely resected (R0) LA NSCLC with N2 disease suggest that its addition to surgery does not improve overall survival but may improve local control when compared to observation strategies (Moderate-quality evidence, Strong recommendation).
B. Phase III studies and meta-analyses of PORT in completely resected (R0) LA NSCLC with N0-1 disease demonstrate inferior survival when compared to observation strategies; therefore, PORT therapy for this patient population is not routinely recommended (Moderate-quality evidence, Strong recommendation).
C. Since level 1 evidence supports the administration of adjuvant chemotherapy for completely resected (R0) LA NSCLC based on

improvements in overall survival compared to patients on observation, any PORT therapy should be delivered sequentially after chemotherapy in order not to interfere with standard of care chemotherapy (Low-quality evidence, Strong recommendation).

D. For patients receiving adjuvant PORT for R0 disease, conventionally fractionated doses in the range of 50 Gy to 54 Gy (in 1.8 Gy-2.0 Gy/day) should be utilized (Low-quality evidence, Strong recommendation).
E. Patients with microscopic residual (R1) primary disease (i.e., positive margin) and/or microscopic (i.e., extra-capsular extension) nodal disease may be appropriate candidates for PORT (given either concurrently or sequentially with chemotherapy) with conventionally fractionated doses in the range of 54 Gy to 60 Gy (in 1.8 Gy-2.0 Gy/day fraction size) in order to improve local control (Low-quality evidence, Strong recommendation).
F. Patients with gross residual primary and/or macroscopic nodal (R2) disease of LA NSCLC may be appropriate candidates for PORT (given either concurrently or sequentially with chemotherapy) with conventionally fractionated doses of at least 60 Gy (in 1.8-2.0 Gy/day fraction size) in order to improve local control (Low-quality evidence, Strong recommendation).

KQ5: When is neoadjuvant radiotherapy prior to surgery indicated for the curative-intent treatment of LA NSCLC?

Guideline Statements

A. There is no level I evidence recommending the use of induction radiotherapy (or chemoradiotherapy) followed by surgery for patients with resectable stage III NSCLC (High-quality evidence, Strong recommendation).
B. In those patients who are selected for trimodality approach, preoperatively planned lobectomy (as opposed to pneumonectomy), based on best surgical judgment is preferable since it was associated with survival benefit in the exploratory post-hoc INT 0139 analysis (Moderate-quality evidence, Strong recommendation).
C. No definitive statement can be made about best patient selection criteria for the trimodality therapy, although no weight loss, female gender, and one (vs. more) involved nodal stations were associated with improved outcome in INT 0139 (Moderate-quality evidence, Strong recommendation).
D. The ideal preoperative radiotherapy dose is currently not known; however, a minimum of 45 Gy should be delivered consistent with the INT 0139 trial (Low-quality evidence, Strong recommendation).
E. Preoperative conventionally fractionated doses up to 60 Gy (in 2 Gy/day) may be associated with reasonable mediastinal clearance rates, although no significant correlation with improved overall survival has been demonstrated (Low-quality evidence, Strong recommendation).

Definitions

ACP Process for Grading of Quality of Evidence

*High-Quality Evidence*

Evidence is considered high quality when it is obtained from 1 or more well-designed and well-executed RCTs that yield consistent and directly applicable results. This also means that further research is very unlikely to change confidence in the estimate of effect.

*Moderate-Quality Evidence*

Evidence is considered moderate quality when it is obtained from RCTs with important limitations—for example, biased assessment of the treatment effect, large loss to follow-up, lack of blinding, unexplained heterogeneity (even if it is generated from rigorous RCTs), indirect evidence originating from similar (but not identical) populations of interest, and RCTs with a very small number of participants or observed events. In addition, evidence from well-designed controlled trials without randomization, well-designed cohort or case-control analytic studies, and multiple time series with or without intervention are in this category. Moderate-quality evidence also means that further research will probably have an important effect on confidence in the estimate of effect and may change the estimate.

*Low-Quality Evidence*

Evidence obtained from observational studies would typically be rated as low quality because of the risk for bias. Low-quality evidence means that further research is very likely to have an important effect on confidence in the estimate of effect and will probably change the estimate. However, the quality of evidence may be rated as moderate or even high, depending on circumstances under which evidence is obtained from observational studies. Factors that may contribute to upgrading the quality of evidence include a large magnitude of the observed effect, a dose–response association, or the presence of an observed effect when all plausible confounders would decrease the observed effect.

ACP Process for Assigning Strength of Recommendation

*Strong Recommendation*

Evidence suggests that the benefit of the intervention outweighs the risk, or vice versa, and the panel has reached uniform consensus.

*Weak Recommendation*

Evidence suggests that the benefit of the intervention equals the risk, or vice versa, and the panel has reached uniform or non-uniform consensus.

### Clinical Algorithm(s)

None provided

## Scope

### Disease/Condition(s)

Locally advanced non-small cell lung cancer (LA NSCLC)

### Guideline Category

Management

Treatment

### Clinical Specialty

Oncology

Pulmonary Medicine

Radiation Oncology

### Intended Users

Physicians

### Guideline Objective(s)

To provide guidance to physicians and patients with regard to the use of external beam radiation therapy (EBRT) in locally advanced non-small cell lung cancer (LA NSCLC) based on available medical evidence complemented by consensus-based expert opinion

### Target Population

Adult patients (aged 19+) with locally advanced non-small cell lung cancer (LA NSCLC)

### Interventions and Practices Considered

1. Radiation therapy alone (external beam dose fractionation)
2. Chemoradiotherapy
    - External beam dose fractionation
    - Hyperfractionated radiotherapy following induction chemotherapy
3. Sequential chemotherapy followed by radical radiation (for patients that cannot tolerate concurrent chemoradiotherapy)

4. Adjuvant postoperative radiation therapy (PORT) if indicated
5. Neoadjuvant radiotherapy prior to surgery

Note: The following interventions were considered but there was insufficient evidence to recommend:

- Escalation beyond 60 Gy with conventional fractionation
- Routine use of induction chemotherapy prior to chemoradiotherapy
- Consolidation chemotherapy after chemoradiotherapy

## Major Outcomes Considered

- Survival rates (overall, disease-free, progression-free, 5-year)
- Local-regional tumor control
- Regional and distant failure rates
- Treatment toxicity (pneumonitis, esophagitis)
- Response rate

# Methodology

## Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

## Description of Methods Used to Collect/Select the Evidence

Literature Search

A literature search strategy was developed around the five practice guideline questions (see below) of external beam radiation therapy (EBRT) dose fractionation for radical radiotherapy alone without chemotherapy, EBRT dose fractionation for radical chemoradiation, timing of radiation in relation to systemic chemotherapy, indications for adjuvant radiotherapy, and indications for neoadjuvant radiotherapy. Inclusion criteria keywords used to construct all five literature strategies for abstract/paper reviews included: human, adult, locally-advanced non-small cell lung cancer, and radiotherapy. Exclusion criteria keywords common to all five questions/searches included: small cell lung cancer, metastatic disease, non-curative or palliative intent, pre-clinical data, pediatric populations, and carcinoid/mesothelioma or thymic tumors. Additional search terms were used as needed (e.g., surgery for questions four and five). All search strategies were performed on PubMed and restricted to English medical literature only to assess for possible article inclusion during the January 1, 1966 to March 15, 2013 timeframe. In particular, identification of randomized controlled trials (RCTs) or of other prospective non-randomized clinical trial or observational studies (if RCTs were unavailable) was the focus of the literature search. Reference lists associated with known published clinical practice guidelines, consensus statements, meta-analyses, and systematic reviews were cross-referenced with search strategies to ensure a complete set of manuscripts and abstracts for review by the Task Force (TF). All potentially relevant abstracts that were identified were reviewed by members of the TF for an assessment of practice guideline relevance prior to data abstraction for creation of evidence tables.

All five guideline questions were converted into PICO format (Participants, Interventions, Comparators, and Outcomes) to help support the construction of literature searches and subsequent data abstraction (patient population composition, treatment interventions, and outcomes). Based on the PICO formatted questions summarized in Table 1 in the original guideline document, appropriate key words and medical subject (MeSH) headings (see Appendix 1 in the original guideline document) were used to search for papers relevant to the respective guideline questions: (1) What is the ideal external beam dose fractionation for the curative-intent treatment of locally advanced non-small cell lung cancer with radiation therapy alone? (528 initial and 25 final articles); (2) What is the ideal external beam dose fractionation for the curative-intent treatment of locally advanced non-small cell lung cancer with chemoradiotherapy? (42 initial and 6 final articles); and (3) What is the ideal timing of external beam radiation therapy in relation to systemic chemotherapy for the curative-intent treatment of locally-advanced non-small cell lung cancer? (42 initial and 15 final articles); (4) What are the indications for adjuvant post-operative radiotherapy for the curative-intent treatment of locally advanced non-small cell lung cancer? (528 initial and 11 final articles); and (5) When is neoadjuvant radiotherapy prior to surgery indicated for the curative-

intent treatment of locally advanced non-small cell lung cancer? (528 initial and 17 final articles). An additional twenty-seven published clinical practice guidelines documents, specifically relevant to one or more clinical practice guideline key questions (KQs), were identified by the clinical guideline chair (GR).

## Number of Source Documents

A total of 74 articles were fully abstracted to provide supporting evidence for the clinical guideline recommendations.

## Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

## Rating Scheme for the Strength of the Evidence

American College of Physicians (ACP) Process for Grading of Quality of Evidence

High-Quality Evidence

Evidence is considered high quality when it is obtained from 1 or more well-designed and well-executed randomized controlled trials (RCTs) that yield consistent and directly applicable results. This also means that further research is very unlikely to change confidence in the estimate of effect.

Moderate-Quality Evidence

Evidence is considered moderate quality when it is obtained from RCTs with important limitations—for example, biased assessment of the treatment effect, large loss to follow-up, lack of blinding, unexplained heterogeneity (even if it is generated from rigorous RCTs), indirect evidence originating from similar (but not identical) populations of interest, and RCTs with a very small number of participants or observed events. In addition, evidence from well-designed controlled trials without randomization, well-designed cohort or case-control analytic studies, and multiple time series with or without intervention are in this category. Moderate-quality evidence also means that further research will probably have an important effect on confidence in the estimate of effect and may change the estimate.

Low-Quality Evidence

Evidence obtained from observational studies would typically be rated as low quality because of the risk for bias. Low-quality evidence means that further research is very likely to have an important effect on confidence in the estimate of effect and will probably change the estimate. However, the quality of evidence may be rated as moderate or even high, depending on circumstances under which evidence is obtained from observational studies. Factors that may contribute to upgrading the quality of evidence include a large magnitude of the observed effect, a dose–response association, or the presence of an observed effect when all plausible confounders would decrease the observed effect.

## Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

## Description of the Methods Used to Analyze the Evidence

Once the guideline chairs approved the relevant abstracts for each guideline question, American Society for Radiation Oncology (ASTRO) staff and the guideline chair created master evidence tables based on abstraction of patient population composition, treatment interventions, and clinical outcomes (see Supplementary Tables e1-e5 in the original guideline document). Additional relevant papers identified by Task Force (TF) members were also included in the master tables or as additional material for justification for guideline statements within relevant narrative statements. Once finalized and approved by the TF, these tables formed the primary evidence base of the consensus-based guideline recommendations contained within this document.

Guideline statements were developed based on the body of evidence categorized by the *American College of Physicians (ACP) Strength of*

*Evidence Rating*. The ACP's ratings consist of high quality evidence (HQE), moderate quality evidence (MQE), and low quality evidence (LQE) to determine net benefits or risks (see the "Rating Scheme for the Strength of the Evidence" field).

## Methods Used to Formulate the Recommendations

Expert Consensus (Delphi)

## Description of Methods Used to Formulate the Recommendations

The Guidelines Subcommittee of the American Society for Radiation Oncology (ASTRO) Clinical Affairs and Quality Committee (CAQC) identified the use of external beam radiation therapy (EBRT) for the curative-intent (radical) treatment of locally advanced non-small cell lung cancer (LA NSCLC) as a high-priority topic needing an evidence-based practice guideline. Accordingly, a topic proposal form (entitled: *ASTRO clinical practice guideline on the role of radiotherapy in locally advanced non-small cell lung cancer*) was prepared by two ASTRO members to initiate the official consideration of this topic by ASTRO leadership. This form was submitted to the ASTRO Board of Directors (BOD) and approved by the BOD in October 2012. The ASTRO BOD both authorized the creation of a practice guideline panel to study issues related to EBRT in LA NSCLC and approved the Task Force (TF) membership (11 Radiation Oncologists, 1 Medical Oncologist, 1 Thoracic Surgeon, and 1 Radiation Oncology Resident) and external expert review panel (3 Radiation Oncologists).

Five specific key questions (KQs) were approved by the ASTRO BOD and CAQC Guidelines Subcommittee specifically related to the ideal EBRT dose fractionation for radical radiotherapy alone (KQ 1), the ideal EBRT dose fractionation (KQ 2) and timing (KQ 3) for radical chemoradiotherapy in LA NSCLC, indications for post-operative (adjuvant) radiotherapy for LA NSCLC (KQ 4), and indications for pre-operative (neoadjuvant) radiotherapy for LA NSCLC (KQ 5). TF members were divided into five subgroups to initially address the separate questions based on their areas of expertise. Through a series of communications by conference calls and emails between January 2013 and January 2014, the TF with ASTRO staff support completed the systematic review, created evidence tables, evaluated the quality of evidence, and formulated the clinical practice guidelines.

Practice guideline recommendations were approved using an a-priori defined consensus-building methodology, supported by the ASTRO-approved tools for the grading of evidence quality and the strength of guideline recommendations. Where available, priority was given to higher quality evidence to form clinical practice guideline recommendation statements in accordance with the Institute of Medicine (IOM) standards.

Guideline recommendation statements were developed and included evidence ratings (where appropriate) which were initially created by the guideline chairs and later approved by all committee members. The level of consensus on the guideline recommendation statements among the panelists was evaluated through a modified Delphi approach using a survey system coordinated by the ASTRO staff involving all participating TF members. Panelists rated the agreement with each individual recommendation pertaining to the key clinical questions on a five-point Likert scale, ranging from strongly disagree to strongly agree (higher score corresponds with stronger agreement). A pre-specified threshold of ≥75% of raters was determined to indicate when consensus was achieved consistent with the published literature and is summarized in Table 2 in the original guideline document.

## Rating Scheme for the Strength of the Recommendations

American College of Physicians (ACP) Process for Assigning Strength of Recommendation

Strong Recommendation

Evidence suggests that the benefit of the intervention outweighs the risk, or vice versa, and the panel has reached uniform consensus.

Weak Recommendation

Evidence suggests that the benefit of the intervention equals the risk, or vice versa, and the panel has reached uniform or non-uniform consensus.

## Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

### Method of Guideline Validation

External Peer Review

Internal Peer Review

### Description of Method of Guideline Validation

The initial draft of the manuscript was reviewed by three expert reviewers nominated by the American Society for Radiation Oncology (ASTRO) lung resource panel. Subsequently, ASTRO legal counsel reviewed the guideline prior to a public comment period (guideline on the ASTRO Web site from February 2014 to March 2014). Upon integration of external reviewer and public feedback into the practice guideline document, the final document was submitted to the ASTRO Board of Directors for final review and approval in June 2014.

## Evidence Supporting the Recommendations

### Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

## Benefits/Harms of Implementing the Guideline Recommendations

### Potential Benefits

Improvement in survival rates, tumor control and response rates

### Potential Harms

- Treatment associated side effects (i.e., pneumonitis, esophagitis, dysphagia, radiation dermatitis, nausea/vomiting, and weight loss)
- A meta-analysis of postoperative radiation therapy (PORT) reported on 2343 patients from 11 trials and noted a significant adverse effect of PORT on survival with a hazard ratio of 1.18 (18% relative increase in the risk of death). The authors further noted that this detrimental effect is most pronounced for patients with stage I/II (N0-N1 nodal disease).

## Qualifying Statements

### Qualifying Statements

- The Guidelines Subcommittee of the Clinical Affairs and Quality Committee of the American Society for Radiation Oncology (ASTRO) prepared this document. ASTRO guidelines present scientific, health, and safety information and may to some extent reflect scientific or medical opinion. They are made available to ASTRO members and to the public for educational and informational purposes only. Any commercial use of any content in this guideline without the prior written consent of ASTRO is strictly prohibited.
- Adherence to this guideline will not ensure successful treatment in every situation. Furthermore, this guideline should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed to obtaining the same results. The physician must make the ultimate judgment regarding the propriety of any specific therapy in light of all the circumstances presented by the individual patient. ASTRO assumes no liability for the information, conclusions, and findings contained in its guidelines. In addition, this guideline cannot be assumed to apply to the use of these interventions performed in the context of clinical trials, given that clinical studies are designed to evaluate or validate innovative approaches in a disease for which improved staging and treatment are needed or are being explored.
- This guideline was prepared on the basis of information available at the time the panel was conducting its research and discussions on this topic. There may be new developments that are not reflected in this guideline, and that may, over time, be a basis for ASTRO to consider

revisiting and updating the guideline according to its policies.

# Implementation of the Guideline

## Description of Implementation Strategy

An implementation strategy was not provided.

## Implementation Tools

Quick Reference Guides/Physician Guides

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

# Institute of Medicine (IOM) National Healthcare Quality Report Categories

## IOM Care Need

Living with Illness

## IOM Domain

Effectiveness

Patient-centeredness

# Identifying Information and Availability

## Bibliographic Source(s)

Rodrigues G, Choy H, Bradley J, Rosenzweig KE, Bogart J, Curran WJ Jr, Gore E, Langer C, Louie A, Lutz S, Machtay M, Puri V, Werner-Wasik M, Videtic GMM. Definitive and adjuvant radiotherapy in locally advanced non-small cell lung cancer: an American Society for Radiation Oncology (ASTRO) evidence-based clinical practice guideline. Pract Radiat Oncol. 2015;(Suppl):1-48. [122 references]

## Adaptation

Not applicable: The guideline was not adapted from another source.

## Date Released

2015

## Guideline Developer(s)

American Society for Radiation Oncology - Professional Association

## Source(s) of Funding

American Society for Radiation Oncology

## Guideline Committee

Definitive and Adjuvant Radiotherapy in Locally Advanced Non-small Cell Lung Cancer Guideline Panel

## Composition of Group That Authored the Guideline

*Panel Members*: George Rodrigues, MD, PhD, FRCPC, Department of Radiation Oncology, London Health Sciences Centre, London, Ontario, Canada; Hak Choy, MD, Department of Radiation Oncology, University of Texas Southwestern, Dallas, Texas; Jeffrey Bradley, MD, Department of Radiation Oncology, Washington University School of Medicine, St Louis, Missouri; Kenneth E. Rosenzweig, MD, Department of Radiation Oncology, The Icahn School of Medicine at Mount Sinai, New York, New York; Jeffrey Bogart, MD, Department of Radiation Oncology, Upstate Medical University, Syracuse, New York; Walter J. Curran Jr., MD, Department of Radiation Oncology, Winship Cancer Institute of Emory University, Atlanta, Georgia; Elizabeth Gore, MD, Department of Radiation Oncology, Medical College of Wisconsin, Milwaukee, Wisconsin; Corey Langer, MD, Department of Medical Oncology, University of Pennsylvania, Philadelphia, Pennsylvania; Alexander Louie, MD, Department of Radiation Oncology, London Health Sciences Centre, London, Ontario, Canada; Stephen Lutz, MD, Department of Radiation Oncology, Blanchard Valley Health System, Findlay, Ohio; Mitchell Machtay, MD, Department of Radiation Oncology, UH Case Medical Center, Cleveland, Ohio; Varun Puri, MD, MSCI, Department of Surgery, Washington University School of Medicine, St. Louis, Missouri; Maria Werner-Wasik, MD, Department of Radiation Oncology, Thomas Jefferson University, Philadelphia, Pennsylvania; Gregory M.M. Videtic, MD, CM, FRCPC, Department of Radiation Oncology, Cleveland Clinic, Cleveland, Ohio

## Financial Disclosures/Conflicts of Interest

Before initiation of this guideline, all members of the panel were required to complete disclosure statements. These statements are maintained at the American Society for Radiation Oncology (ASTRO) Headquarters in Fairfax, VA, and pertinent disclosures are published within this report. The ASTRO Conflict of Interest Disclosure Statement seeks to provide a broad disclosure of outside interests. Where a potential conflict is detected, remedial measures to address any potential conflict are taken and will be noted in the disclosure statement. The guideline chairs (GR and GV) in concert with the ASTRO Guidelines Subcommittee reviewed these disclosures and determined that they have no substantive impact upon the content of the manuscript.

George Rodrigues, MD, PhD has received research funding from the Ontario Institute of Cancer Research. Jeffrey Bradley, MD has received research funding from Calypso Medical Inc. Jeffrey Bogart, MD has received travel expense funding from Alliance Clinical Trials Cooperative Group. Hak Choy, MD is on the advisory board for EMD Serono and Bayer. In addition he has received research funding from Celgene and has been a consultant for Eli Lilly. Walter Curran Jr, MD has been a consultant for Bristol Meyers Squibb. Corey Langer, MD has received honoraria, been a consultant to, or served on the advisory board of Bristol Meyers Squibb, Eli Lilly, Genentech, Synta, and Abbott. Mitchell Machtay, MD served as a consultant to Bristol Meyers Squibb, Eli Lilly, and Imclone. Maria Werner-Wasik, MD received travel expense funding from Elekta Oncology.

## Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

## Guideline Availability

Electronic copies: Available from the American Society for Radiation Oncology (ASTRO) Web site .

## Availability of Companion Documents

The following are available:

- Rodrigues G, Choy H, Bradley J, Rosenzweig KE, Bogart J, Curran WJ Jr, Gore E, Langer C, Louie A, Lutz S, Machtay M, Puri V, Werner-Wasik M, Videtic GMM. Definitive radiation therapy in locally advanced non-small cell lung cancer: executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based clinical practice guideline. Pract Radiat Oncol. 2015 May-Jun;5(3):141-8. Electronic copies: Available from the American Society for Radiation Oncology (ASTRO) Web site .
- Rodrigues G, Choy H, Bradley J, Rosenzweig KE, Bogart J, Curran WJ Jr, Gore E, Langer C, Louie A, Lutz S, Machtay M, Puri V, Werner-Wasik M, Videtic GMM. Adjuvant radiation therapy in locally advanced non-small cell lung cancer: executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based clinical practice guideline. Pract Radiat Oncol. 2015 May-Jun;5(3):149-55. Electronic copies: Available from the ASTRO Web site .

## Patient Resources

None available

## NGC Status

This NGC summary was completed by ECRI Institute on August 18, 2015. The information was verified by the guideline developer on October 6, 2015.

## Copyright Statement



# Disclaimer

## NGC Disclaimer

Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion-criteria.aspx.

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